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An assessment of governance quality for community-based forest management systems in Asia: Prioritisation of governance indicators at various scales

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ABSTRACT

Community-based forest management systems (CBFMS) are becoming increasingly popular in developing countries where 31% of the total forest is either managed or owned by the community. This paper presents the results of a four-country study conducted in 2017 in Nepal, Bhutan, India and Myanmar concerning the governance quality of CBFMS. The introduction outlines the global threat to forests, the contribution that forest-based emissions make to climate change, and the policy response of the international and national communities including REDD + . The next section provides a snapshot of CBFMS in the four case study countries, and is followed by an account of the methodology, approach, framework of analysis and sampling surveys undertaken during the course of, and informing, the research. The results of the surveys revealed that perceptions of governance quality, as well as governance priorities, varied between the countries, and also at the three levels of government (national, sub-national and local) within a country. For example, Myanmar and Bhutan had very high governance ratings from local levels compared to other levels, whereas, Nepal and India had similar ratings for all levels. Further, regarding the prioritisation of different indicators, Myanmar gave highest priority to "inclusiveness" at the local level but "democracy" at the national level. The reasons for the similarities and differences between and within these countries and the possible implications are discussed.

1. Introduction

Between 2010 and 2015 the earth lost an average of 7.6 million hectares of forests annually (FAO, 2015), the equivalent of more than 10% and 50% of land area in Myanmar and Nepal, respectively. Deforestation and forest degradation account for over ten percent of total anthropogenic greenhouse gas (GHG) emissions globally (49 ± 4.5 Gt CO_2e/yr) (Intergovernmental Panel on Climate Change (IPCC, 2014; UN REDD Programme, 2016). The United Nations Framework Convention on Climate Change (UNFCCC), which entered into force in 1994 with the aim of preventing "dangerous anthropogenic interference with the climate system" has responded by developing a policy initiative referred to 'reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries', referred to as REDD + (UN, 1992; UNFCCC, 2018). Without this initiative, it is unlikely that the proposed target for maintaining the average global temperature at 1.5–2 °C above pre-industrial levels, as proposed by the Paris Agreement, can be achieved (UNFCCC, 2015). By early 2018, 175 of the 197 signatories to UNFCCC had ratified the Paris

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Agreement (PA) (UNFCCC, 2018) and 149 developing countries have now submitted their Nationally Determined Contributions (NDCs). Ninety seven of them included Land Use, Land Use Change and Forestry (LULUCF) in their NDCs and of these countries 50 are aiming for emissions reductions through REDD + activities (Corbera and Schroeder, 2017; Lima et al., 2017). If the NDCs are fully implemented, LULUCF will transform from a net anthropogenic GHG source (during 1990–2010, 1.3 ± 1.1 GtCO2e/yr were emitted) to a net sink of carbon by 2030 (capturing up to 1.1 ± 0.5 $GtCO_2e$/yr), providing 25% of emission reductions committed in the NDCs (Grassi et al., 2017; Lima et al., 2017). As a key component of LULUCF, REDD + has a significant role to play in combating climate change. In response to the scale of existing deforestation and forest-based emissions, billions of dollars have been channelled into developing countries for REDD+ (Bleaney et al., 2010). However, weak governance and illegality are major problems in these countries (Thompson et al., 2011; Palmujoki and Virtanen, 2016; Sikor and Cầm, 2016; Vijge et al., 2016; Cadman et al., 2017).

REDD + is designed for reducing emissions in developing countries, where community-based forest management systems (CBFMS)[1] are becoming increasingly popular (Bottazzi et al., 2013; Robinson et al., 2013; Sharma et al., 2015; Peras et al., 2016). Globally, in 2002, approximately 11% of forests was either community managed or owned, but by 2013 this had increased to 15% (RRI, 2014). While the area of forests under CBFMS remained relatively constant in the developed countries, in developing countries it rose from 21% to 31% over the same period (Maraseni et al., 2014; RRI, 2014). The Popularity of CBFMS is based on the premise that the rights to and ownership of common pool forest resources reside with local people (Ostrom, 1990; de Oliveira et al., 2013). Although tenure and rights are not always clear, local communities globally have nevertheless experienced some degree of ownership of local forest commons, and historically have created a range of local institutions to make use of forests resources (Gilmore, 2016). Over the last 40 years, CBFMS has been tested and demonstrated as a powerful vehicle for improving social, environmental and economic outcomes (Gilmour, 2016). In addition, it has the potential to address 10 Sustainable Development Goals (SDG 1, 2, 5, 6, 8, 11, 13, 15, 16 and 17) out of the 17 (Lamsal, 2018). Consequently, community based systems may become a significant forest management regime globally.

The concept of CBFMS was initially developed in the mid-1970s with the simple aim of involving local people in a forestry activities. Since then, a series of international policies have been developed and adapted for the purpose of strengthening the role of local communities in the sustainable management of forests through such intergovernmental forums as: the 1992 Rio 'Earth' Summit and the Commission on Sustainable Development which endorsed and recognised the role of local people; the 1995 Intergovernmental Panel on Forests and its successors, the Intergovernmental Forum on Forests and the United Nations Forum on Forests (UNFF), which have emphasised the importance of participatory forest management; and the 1996 International Union for Conservation of Nature, which established a working group and produced five regional reports on CBFMS, widely used for international discussions between 1996 and 2000. A number of intergovernmental organisations have also kept CBFMS high on their agendas and urged all countries to promote the role of local communities, and include the Centre for International Forestry Research, Food and Agriculture Organisation of the United Nations (FAO), International Tropical Timber Organisation (ITTO) and the Collaborative Partnership on Forests. It should also be noted that in 2015, UNFF formally recognized the importance of CBFMS in advancing sustainable forest management (Cadman, 2011).

A key objective of 'good' forest governance is to promote the sustainable management of resources, to ensure ongoing ecological processes whilst also creating economic and social benefits (Lammerts van et al., 1997; Paudyal et al., 2017). This has also been recognised as a central aspect of REDD+, and at the 16th Conference of Parties in Cancún all Parties to the UNFCCC endorsed a set of principles to guide the mechanism's implementation, referred to Cancún Agreement (UNFCCC, 2011a). Countries undertaking REDD + activities must comply with a series of 'safeguards' relating to the participation of local communities and Indigenous peoples, the transparency and effectiveness of governance, as well as land tenure and gender issues (Cadman et al., 2016). In addition, each country needs to develop a reporting mechanism referred to as a 'Safeguard Information System' as an instrument for the collection and provision of how REDD + safeguard principles are addressed and respected throughout the implementation of REDD + activities (UN REDD Programme, 2016). There are now numerous REDD + and forest-related climate change projects or programmes all over the world, with a range of institutional arrangements and national governance structures, and which vary in their effective operationalisation (Fujisaki et al., 2016). By the end of 2015, there were 101 REDD + activities in 33 developing countries (Linacre et al., 2015a,b). CBFMS plays a significant role in many of these projects and programmes (Pandey et al., 2014a,b, Maraseni and Pandey, 2014; Maraseni et al., 2014), and the relationship between REDD+, community forestry and governance has been explored in some detail (Yeang, 2012; Blomley et al., 2017; Khatri et al., 2018).

CBFMS may be viewed as a manifestation of the 'government to governance' transition from top-down, command-control models of coordination, towards more social-political forms of participation (Kooiman, 1993, 2000). This has led some observers to conclude that CBFMS is now broad enough to include "initiatives, sciences, policies, institutions and processes that are intended to increase the role of local people in governing and managing forest resources" (RECOFTC, 2013). However, there are a variety of stake-holding groups at different jurisdictional levels, across tenure types, and with varying degrees of economic development and experience (Hickey and Innes, 2005; Hickey et al., 2006; Hendee and Flint, 2013). It has been further argued that community forestry requires good governance systems to function properly (Gibson et al., 2000; Colfer et al., 2008; Pokharel and Tiwari, 2013). This is particularly the case of view of the fact that CBFMS very often function within broader 'multi-level' governance arrangements, especially for intergovernmental programmes such as REDD+ (Doherty and Schroeder, 2011; Gallemore et al., 2015; Maryudi and Sahide, 2017; García-López and Antinori, 2018).

Given these observations regarding the governance conditions for community forestry, this paper evaluates the governance quality of CBFMSs at local, sub-national and national levels in four REDD + countries: Nepal, Bhutan, India (state of Mizoram) and Myanmar, using a hierarchical framework of principles, criteria and indicators. These four countries are under the jurisdiction of the International Centre for Integrated Mountain Development (ICIMOD). The ICIMOD, with the REDD+ Himalayan project, is fostering the 'REDD + readiness' processes in these countries. Over the last few years, these four countries have made substantial progress in REDD + preparedness. All of these countries are active in community-based forest management systems, but the stage of development varies. Therefore, the outcome of this study could provide valuable lessons for each country.

The framework assesses the extent to which, according to stakeholders, the governance structures and processes in each country facilitate effective interactions between interested parties; this in turn enables an evaluation of the legitimacy of institutional arrangements overall (Breakey et al., 2015, 2017). The authors conclude that while

[1] Community based forest management is a participatory management system known by different names in various countries, although all share certain characteristics, including the involvement of local people in the conservation and management of forest resources, the decentralization of power and defined property rights (Kellert et al., 2000; Maraseni et al., 2005).

Table 1
Key attributes of four countries, in relation to community based forest management systems.
Sources: (1) * For Nepal, Lamsal, 2018; Maraseni et al. (2005); Pandey et al. (2014a,b and 2016); (2) ** for Bhutan: National Statistical Bureau (NSB, 2017), Forest Resources Management Division (FRMD, 2017), Forest Information Management Section (FIMS, 2017); (3) *** for India, Forest Survey of India (FSI, 2017), Indian Council of Forestry Research and Education (ICFRE, 2018), Census of India (2011) and Forest Research Institute (FRI, 2011); and (4) for Myanmar, FAO (2015); Census Data (2014); Community Forestry Unit (CFU, 2017); Community Forestry Instructions (CFI, 2016). Note: CF, Community Forest; HH, Household; CFMG, Community Forests Management Group; JFMC, Joint Forest Management Committee; and CFUG, Community Forests User Group.

Attributes	Nepal*	Bhutan**	India***	Myanmar***
Forests area as a percentage of total area	44.74%	71%	21.54%	42.92%
Total population	28.95 million	779,666	1.210 billion	51.486 million
Starting year of CF policy	1976	1995	1990 (Joint Forest Management)	1995
Key forest policies in relation to CF	National Forestry Plan 1976; Forest Act 1993; Forest Regulations 1995; Guidelines for Community Forest Inventory 2004; Guidelines for Community Forestry Development Programme 2009	Forest & Nature Conservation Act 1995; Forest & Nature Conservation Rules, 2006; Land Act 2007; National Forest Policy of Bhutan, 2011; Forest and Nature Conservation Rules and Regulations, 2017	National Commission on Agriculture 1976; Forest Conservation Act 1980; The Environmental Protection Act 1986; National Forest Policy 1988; JFM Circular of June 1 st 1990, and the subsequent 2000 and 2002 Guidelines; Panchayats (Extension to Scheduled Areas) Act 1996; The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006; The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Amendment Rules 2012	Community Forestry Instructions 1995; Revised Forest Law (drafted); Forest Policy 1995; Myanmar Agenda 21 1997; Forestry Master Plan (2001-2030); Vacant, Fallow and Virgin Land Management Bill 2012.
Total area of CF	18,13,478 ha	85,165 ha	24.6 million ha	201638 ha
Number of households (HH) involved in CF	24,61,549 HHs	30,934 HHs	14.5 million HHs	99315 HHs
Total number of CF groups	19,361 CFUGs	745 CFMGs	112,816 JFMC	3669 CFUGs
Range of CF area for each group	Less than 1 hectare to more than 4000 hectare	4.86 ha to 1455 ha	From a fraction of a hectare up to over 2000 ha	0.81 ha to 2550 ha
Types of area is handed over to communities	Mostly degraded but any forest land close to the communities	Any forest land in close vicinity of human settlement which has been traditionally used and managed by the community.	Natural forests, degraded forest lands close to community	Degraded land where natural regeneration is difficult; areas where potential to meet the local demands for forest products and income opportunities; areas where soil and water resources conservation is needed and suitable for the establishment of CF; forest lands traditionally and customarily managed by the local community.
Current status of CF	Mature	Immature	Mature	Immature
Common users	Any who are close to forests	Rural households that are close to forests (equal ratio of rich and poor)	Both rich and poor, close to forests	Any who has lived continuously for 5 years within 5 miles from the periphery of the forest
The scale of progress of CF since its inception	Very high	Very high	Very high	Very high
Key reasons of conflicts within and between CFs	Benefit sharing	Boundary of CF and State Reserved Forest	Tenure, benefit sharing, livelihood opportunities	Including all ethnic groups
Key rights of user groups	Use and management rights	Except land title rights, have all other rights	Community rights, carbon rights, management right, access to forest lands	Land title, access, withdrawal, management, exclusion, enterprise development
Key motives behind the handover of forests to the communities.	To restore degraded land; to support the livelihood of user groups; and to protect forest land from encroachment	To empower rural communities manage forests sustainably for socio-economic and environmental benefits, poverty reduction and to contribute to overall sustainable forest management at national level.	To restore degraded lands; to protect from encroachment; to support the livelihood of users; to respect rights of forest dwelling communities for traditional usage of natural resources; & to conserve, maintain as well as enhance country's forest cover and natural resources	To provide forest and tree related basic needs such as wood and non-wood forest products for local communities; to enhance employment and income opportunities for local community and reduce poverty; to increase forest covered area; and to enhance environmental services that can support climate change mitigation and adaptation through preventing deforestation and forest degradation.
Most common forest management in CF	Restoration, reforestation, protection & harvesting	Utilization, Protection and restoration	Afforestation of degraded, deforested and barren lands; &forest, management and protection and forest harvesting	Forest protection and plantations

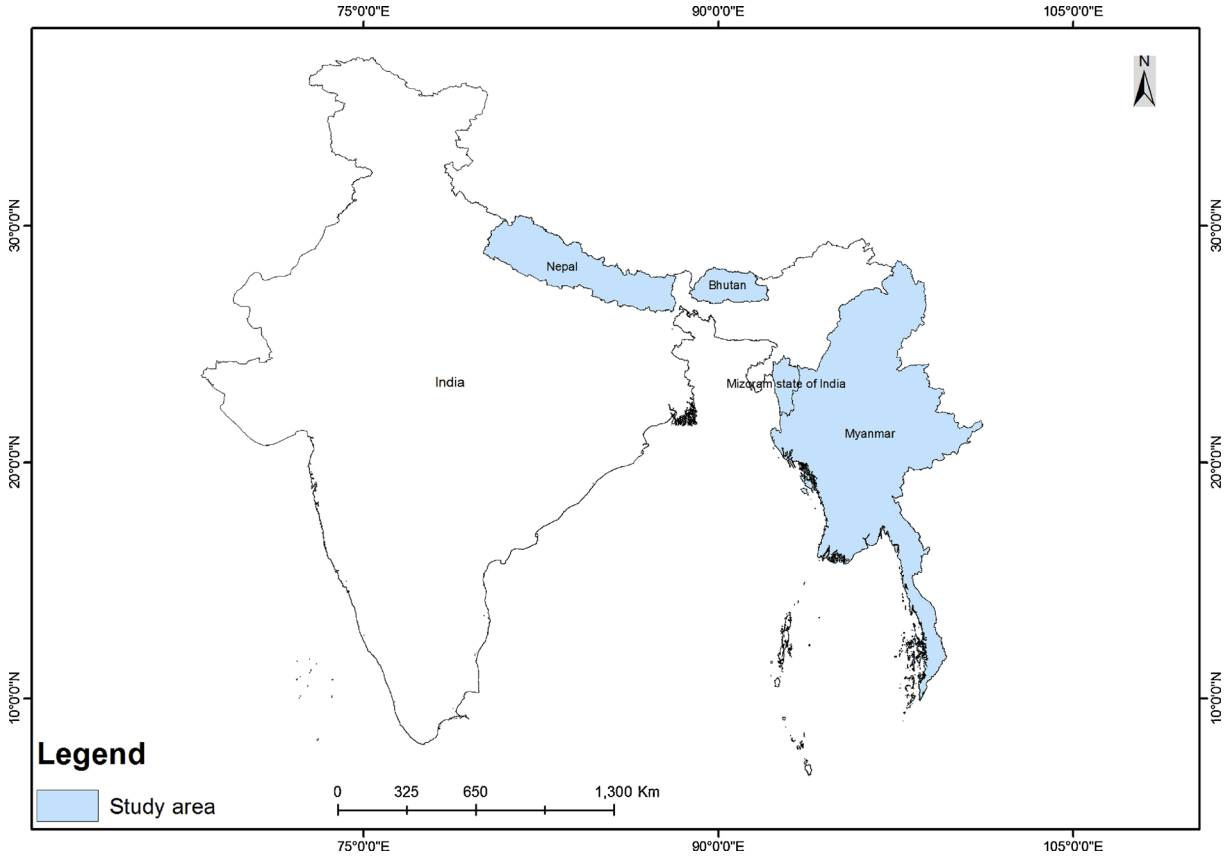

Fig. 1. Location of study countries (Myanmar, Bhutan, Nepal and Mizoram State of India).

CBFMS may be useful for developing programmes such as REDD + , this is dependent on the quality of governance within each country, including at the different jurisdictional levels. The paper provides a summary of the context of CBFMS in each country, describes the methodology for assessment, and presents the results of the research, including stakeholders' perceptions and priorities at the different jurisdictional levels, and stakeholders' governance priorities. The paper concludes with some observations and comments as to how CBFMS may be improved, especially in the context of multi-level governance, and REDD + .

2. Methods

2.1. A brief snapshot of the community forest regimes of the four case study countries

A brief snapshot of the key attributes of the four countries, in relation to CBFMS, is presented in Table 1, and Fig. 1 shows the location of these countries. The CBFMS of Bhutan and Myanmar may be classified as early stage, whereas the systems of Nepal and India are relatively mature. In Bhutan, community forestry officially started in 1995 with the Forests and Nature Conservation Act 1995, repealing the Bhutan Forest Act of 1969, which had a specific chapter on community forestry. However, the progress was very slow and only 19 community forest management groups (CFMGs) were established. It was not until the Forest and Nature Conservation Rules of 2000 (revised in 2003 and again in 2006), that a more conducive and enabling environment for community forestry arose (Royal Government of Bhutan, 2010). Since then, the number of CFMGs has been growing exponentially and as of 31 March 2018, there were about 745 CFMGs, with an estimated 30,934 participating households managing 85,165 ha of forests.

Similarly, in Myanmar, community forestry was initiated after the implementation of the Community Forestry Instruction of 1995, but it only gained momentum after the implementation of the Forestry Master plan 2001, which aims to hand over 2.27 million acres (918,000 ha) of forest to the local community by 2030 (1.36% of the total forest area) (MONREC, 2018). Currently, there are about 3669 community forest user groups (CFUGs) with estimated membership of 99,315 households managing 201,638 ha of forests (CF Unit, 2017). Nepal started community forestry after the implementation of the 1976 National Forestry Plan but it accelerated only after 1995, thanks to the more community-friendly 1993 Forest Act and the 1995 Forest Regulations (Maraseni et al., 2005; Dhakal et al., 2007). By the end of 2017, there were over 1.8 million ha of CF managed by 19,361 user groups – around one third of the country's entire population (Lamsal, 2018). In India, the participation of local community in managing forests dates back to 1931 and the *Van Panchayat* system in Uttarakhand. Now, about 6777 *Van Panchayats* manage approximately 5241 square km of forest. The participatory forest management approach was initiated by West Bengal forest Department as a pilot project in Arabari village of West Bengal during 1971-72 and involved government and local communities in the regeneration and protection of degraded forests with a commensurate improvement in the livelihood opportunities for forest dependent communities. The later concept of Joint Forest Management was formalised under the National Forest Policy of 1988 and the Joint Forest Management Circular of 1990. There are almost 112,816 joint forest management committees (JFMC) and managing about 24.6 million ha of forest area (ICFRE, 2018).

In the past, the forests of many countries were nationalised, as forests were seen as common resources with strategic value that needed both protection and production for the purposes of providing goods and services, as well as national revenue (Larson et al., 2010). However, public forestry organizations failed to effectively protect and manage forests (FAO, 2012; Baral et al., 2017). On the other hand, practitioners

argued that the evidence suggested local communities would make better managers under the right institutional arrangements (Gilmour, 2016). This has led to a number of developing countries now viewing community forestry as a better resource management model (RRI, 2014; Maraseni et al., 2014).

In all of the four countries investigated mostly degraded forests, or forest land adjacent to communities and therefore likely to be degraded, were handed over to local communities, with the objectives of restoring and protecting degraded lands from encroachment; supporting the livelihoods of users; and respecting the rights of local communities for traditional use. Evidence suggests that these objectives have been successful. For example, after the implementation of CBFMS in India and Nepal forest cover increased, natural regeneration has continued, landslides have reduced, and some of the endangered flora and fauna have been protected (Larson et al., 2010).

2.2. Framework for assessment of governance quality

The idea that states have obligations towards their national citizens and individuals in the formulation of development policies first appears in the United Nations Declaration on the Right to Development, adopted by General Assembly resolution 41/128 of 4 December 1986, which calls for the "active, free and meaningful participation in development and in the fair distribution of the benefits resulting therefrom" (United Nations (UN, 1986). The concept re-appeared in the preamble to the 1993 Rio outcome document *Agenda 21*, in the context of encouraging cooperation and the environment and development with the "broadest public participation", and ensuring poverty alleviation via "democratic participation process[es] in association with improved governance" and including "full participation in decision-making" around natural resource management (UN, 1993). The importance of meaningful participation of local communities is accepted in the forest arena, and has been part of the World Bank's forest-related lending policies for some time (Murty, 2009). This language appears in the Cancún Agreements, associated with REDD + in a more succinct form, as the "full and effective participation of relevant stakeholders" (UNFCCC, 2011a,b).

Building on the work of the *Agenda 21* and the *Statement of Forest Principles*, and using a hierarchical framework of principles, criteria and indicators, the researchers developed a consistent approach to evaluating forest governance at the global, regional, national and local levels (Table 2). A principle is a fundamental value, or rule pertaining to governance. Criteria are conditions or states of governance that categorise a specific principle. Neither principles nor criteria are able to be assessed directly, but represent a set of attributes that determine compliance. The intention in situating these elements within framework of assessment is to make sure they are placed at the correct level, in order to facilitate an analysis of the specific principles via their associated criteria and thence to indicators. Indicators can be both quantitative and qualitative variables, and describe states that are indicative of the condition of the governance system as a whole. They may be measured, and are used to determine compliance with the relevant criterion, and associated principle, and therefore allow for the determination of quality of governance overall (Lammerts van et al., 1997). It is important to emphasise the importance of consistency in the correct hierarchical arrangement of principles, to criteria, and thence to indicators. Consistency allows for the appropriate location of elements within the framework, avoiding overlap or duplication at another level, and enabling a hierarchical analysis from principles to criteria and thence to indicators (Lammerts van et al., 1997). Without this consistent hierarchical arrangement, assessment cannot occur systematically, and different aspects of governance become confused. This has not been helped by governance scholars and practitioners, such as NGOs, who can be unclear as to the relationship between these concepts, a consequence of their interest in specific governance arrangements (most often accountability and transparency), overlooking the importance of the relationship between governance arrangements, and institutional structures and processes (Cadman, 2009: 90). The indicators represent those elements of the principles and criteria that can be measured, and as such this framework representing the full suite of values an institution may need to function effectively, and legitimately (Breakey et al., 2017; Cadman et al., 2016).

Table 2
Hierarchical framework of principles, criteria and indicators (PC&I).
Source: Cadman, 2011

Principle	*Criterion*	Indicator
Meaningful participation	*Interest representation*	Inclusiveness Equality Resources
	Organisational responsibility	Accountability Transparency
Productive deliberation	*Decision making*	Democracy Agreement Dispute settlement
	Implementation	Behaviour change Problem solving Durability

For analytical purposes, the principle of 'meaningful participation' has been broken down into interest representation (inclusiveness, equality and resources – or capacity), and organisational responsibility (accountability and transparency). The effectiveness of participation can be evaluated by investigating the levels of interest representation, and the responsible behaviour of participating organisations, and is more concerned with the structures of governance. Evaluating the effectiveness of decision-making is more about determining if the deliberations reflect the aspirations of participants, and is related to issues of process, including procedural justice such as methods for reaching agreements and settling disputes, and that the discussions in which stakeholders are involved are productive, i.e., they result in measurable outputs, that when implemented substantively tackle the problem the particular institution was created to address. Substantive outcomes include changing the behaviours that led to the initial problem, solving the problem the institution was created to address, and generating long-term solutions (Cadman, 2011). Here the understanding is that deliberation accommodates the various sectors that exist in the social and political context of environmental management, such as NGOs, governments, business, and expert groups (Hendriks, 2011). The quality of the deliberations in which stakeholders are participating also contributes significantly to the legitimacy of the institution in question (Johnstone, 2011); hence the principle of 'productive deliberation'. In Fig. 2 below the relationship between the principles, criteria and indicators referred to above, and their hierarchical relationships are represented within an 'ideal' governance system (Cadman, 2009).

Using this approach to governance evaluation, the researchers conducted a number of global, national and local desktop-level studies, generating a variety of publications (Cadman and Maraseni, 2012 & 2013; Cadman et al., 2015; Maraseni and Cadman, 2015; Glynn et al., 2017; Cadman et al., 2016 & 2017). The framework was also applied and tested in the field in both Nepal and Papua New Guinea (Cadman et al., 2016 and 2017). The methodology includes the use of action-research to engage representatives of all relevant constituencies in stakeholder driven, multilevel and multistage consultation processes for developing context-specific governance standards relevant to REDD+, CBFM and other forms of forest management (López-Casero, 2016). As such, the framework for assessment, and the approach to standards development facilitates the requirements for 'full and effective' participation under the Cancún Agreements, and is of specific relevance to transparency, governance, benefit sharing, gender, and other aspects of social and environmental management applicable under programmes such as REDD + . The stakeholder-driven nature of the framework, and its standards development processes, have been of particular relevance

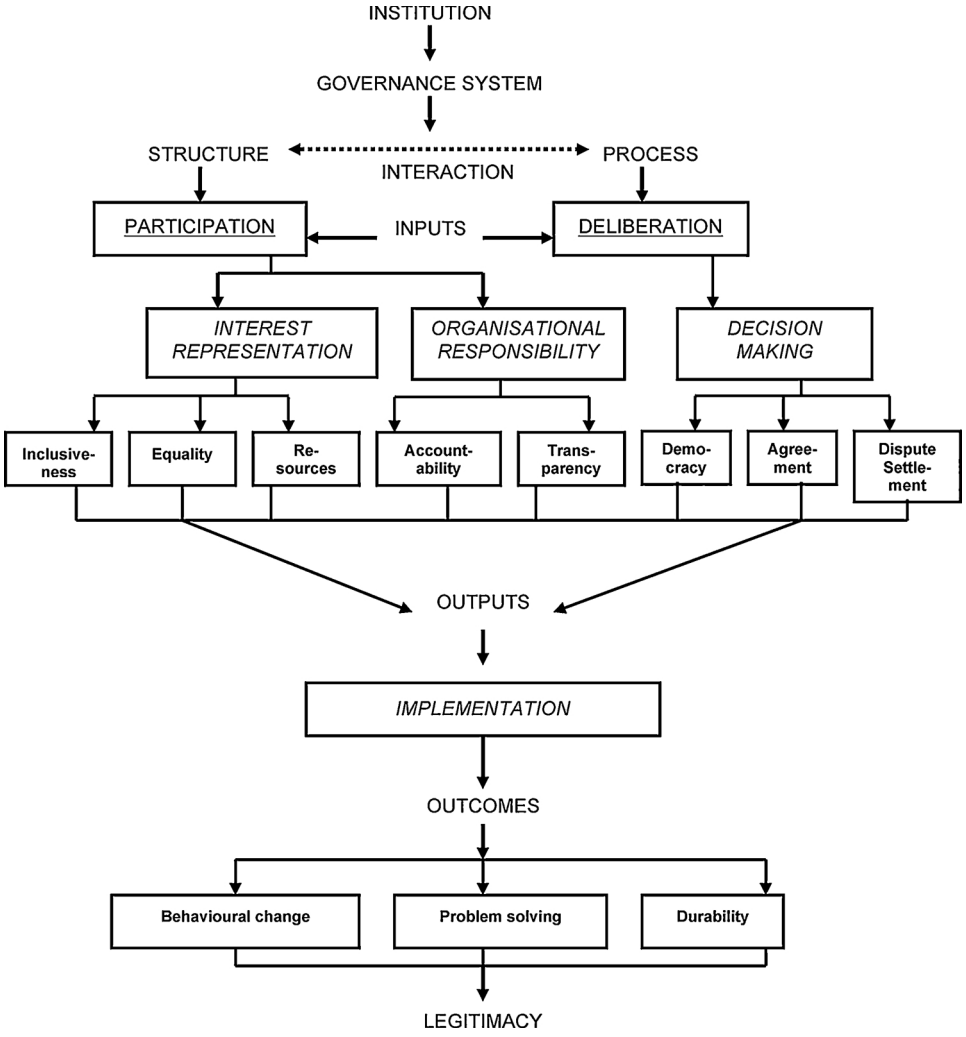

Fig. 2. Ideal institutional model of governance quality (Boxed typeface indicates hierarchical relationship at the Principle, *Criterion and* Indicator levels; Source Cadman, 2009).

for the assessment of the governance quality of community forestry (Maraseni and Cadman, 2015 and Cadman et al., 2016 & 2017). In summary, the framework is constructed around two principles, four criteria and 11 indicators. It is at the indicator level that governance quality is ultimately measured.

2.3. Sampling design and surveys

There was a wide variety of participating stakeholders in community forest management distributed across all levels in the case study countries with varying perceptions and aspirations for CBFM. In order to capture these differences, each country was divided into three different quasi-jurisdictional strata: national, sub-national and local (Table 3). Purposive sampling was conducted at national level, in every country. At the sub-national and local level snowball sampling was conducted, in which, national level stakeholders recruited sub-national level respondents and which in turn recruited local level respondents. In total, at least 30 respondents were recruited at each level.

Table 3
Sample size of respondents from four different countries with three different levels.

Country	Local level	Sub-national level	National level	Total
Nepal	33	31	30	94
Bhutan	40	30	35	105
India (state of Mizoram)	32	31	31	94
Myanmar	30	34	30	94

National level respondents included representatives of national governments, non-governmental organizations (NGOs), federations, the private sectors religious institutions and research bodies. Similarly, sub-national level respondents comprised representatives of state, provincial and district level governments as well as NGOs also active in those jurisdictions. Local level respondents included representatives of community forest user/management groups including women, youth, indigenous/tribal groups, dalit (low caste) and other marginalized and/or economically disadvantaged groups. In total, the results were based on 387 respondents from four countries.

All community forestry stakeholders in a country operate under common policies as well as legislative and regulatory frameworks. Moreover, the perceived opportunities and challenges confronting community forestry are similar. Consequently, an argument could be made that the use of small-n sample sizes at each jurisdictional level is representative of the stakeholder interests within the population.

Structured questionnaires (Table 4) asked each respondent to rate their perceptions of the governance quality of the community forest management regime in which they were involved by means of a five-point Likert scale, where 1 was of 'very low' quality and 5 was 'very high'. Since there were 11 indicators, the maximum and minimum

Table 4
Questionnaire for 11 indicators for face-to-face interview with respondents in four countries.

Questions	Very low (1)	Low (2)	Medium (3)	High (4)	Very high (5)
Inclusiveness: Do you think you are able to represent your interests within the CBFMS process					
Equality: Do you think CBFMS treats your interests equally?					
Resources: How do you rate the resources (economic, technical, institutional etc.) provided for you to participate in CBFMS process?					
Accountability: Do you think the various institutional elements in which you participate are accountable in their dealings with you regarding CBFMS process?					
Transparency: Do you think the various institutional elements in which you participate are transparent in their dealings with you regarding CBFMS process?					
Democracy: Do you believe that CBFMS processes in which you participate act in a democratic manner?					
Agreement: How effective is the agreement making process in CBFMS?					
Dispute settlement: How effective is the dispute settlement process CBFMS?					
Behavior change: Do you think CBFMS will contribute to changing the behavior that leads to deforestation, forest degradation and biomass enhancement?					
Problem solving: Do you think CBFMS will help solve the problem of deforestation, forest degradation and biomass enhancement?					
Durability: Do you consider CBFMS to be durable?					

Notes: Summary of questions only; explanatory material omitted.

possible scores were 55 and 11. Respondents were also able to provide further comments in relations to each indicator if they wished. All the data were analysed using the Statistical Package for the Social Sciences (SPSS).

2.4. Ranking or prioritisation of indicators

Respondents were also requested to prioritize each indicator from 1 to 11 on the basis of their perceptions of significance at their level, where 1 was the least important and 11 was the most important. Rank was sequential, and not repeatable. Therefore, the minimum and maximum possible average scores were 1 and 11. The higher the average score the greater the importance of the indicator. It should be noted that the prioritization exercise happened after interaction with the researchers, and after they rated their perception of the governance quality. Therefore, they are more knowledgeable about the key concept of and differences among the indicators. The objective was to identify key indicators in each level to enable government and other stakeholders to prioritise their scarce resources in order to develop the most optimum outcomes, given their capacity, and funding constraints.

Using excel sheets, we populated all the ranking data for each indicator, and then summed and averaged these values at each level. The prioritisation of indicators, in the four countries, was determined on the basis of their importance at each level and presented in graphical form. This same process was followed for the national level averages, using the total number of respondents in each country.

3. Results and discussions

3.1. A comparison of governance quality of CBFMS in Nepal, Bhutan, India and Myanmar at national level

Table 5 presents the assessment scores of the 11 governance indicators for CBFMS in the four case study countries. The total scores for the governance quality of CBFMS in the four countries were similar, with Myanmar achieving the highest rating.

Among the 11 indicators assessed, 'Durability' received the highest rating and 'Resources' the lowest. The results for Durability suggest that stakeholders were of the view that CBFMS has the potential to provide a sustainable solution to problems of forest management over the longer term. As noted above, the researchers have applied the same assessment framework to a range of intergovernmental policy mechanisms including REDD+ (Cadman and Maraseni, 2012, 2013; Cadman et al., 2015; Maraseni and Cadman, 2015; Glynn et al., 2017; Cadman et al., 2016, 2017), in which, 'Inclusiveness' received the highest rating from respondents (Cadman et al., 2016, 2017). Being a global mechanism this is logical, as the REDD + policy requires all stakeholders are included.

The results from the CBFMS differ, and reveal some interesting patterns at the principle and criterion levels (Table 6). At the principle level "Productive deliberation" achieved a higher score than "Meaningful participation". This may suggest that there is room for improvement in the governance structures of CBFMS, notably around the provision of resources for participants within the different country systems. In all countries, of the four criteria "Implementation" scored highest, followed by 'Decision making'. The high score for Implementation and its related indicators may suggest that in the eyes of respondents CBFMS has the potential to change peoples' behavior, and address the problem of deforestation and forest degradation over time. It should also be noted that the high score for Decision making may also indicate that respondents considered CBFMS as embodying democratic values, with the ability for participants to reach agreements and settle disputes.

3.2. A comparison of governance quality of CBFMS at three different levels

Given the earlier observation that community forestry stakeholders may have different aspirations and perceptions at different jurisdictional levels, the study sought to determine if this is the case at the indicator level (Table 7). In the cases of Nepal and India the perceptions of stakeholders at the three different levels were similar; for Myanmar and Bhutan the total scores at the local level were much higher than those of other levels. CBFMS has a long history in Nepal and India (Larson et al., 2010; Pandey et al., 2014 and 2016), and therefore stakeholders at all levels have had exposure to policies, laws and regulations over time. However, community forestry is relatively a new concept in both Myanmar and Bhutan (Royal Government of Bhutan, 2010; RECOFTC Myanmar, 2018). This may partially explain why the scores varied across jurisdictions. Local level stakeholders in Myanmar are currently receiving development support from donors, which may be influencing their thinking towards the prospect of community forestry. The SuComFor Project for example has funding of US$532,017, and is implementing community forestry programmes in 103 CFUGs in seven townships, with each CFUG receiving between US$4087 to US $10,282 (RECOFT Myanmar, 2018). Similarly, the higher results from local level stakeholders in Bhutan may also be due to perceptions regarding the benefits from CBFM, as on average, each household in Bhutan has access to 2.67 ha of forests – much higher than in other countries (Table 1). It should be noted, however that respondents at the local level in Myanmar rated Resources at a relatively low level (2.8 out

Table 5
An assessment of governance quality of CBFMS in Nepal, Bhutan, India and Myanmar.

Principle	Meaningful Participation					Productive deliberation						Total (out of 55
Criterion	*Interest representation*			*Organisational responsibility*		*Decision-making*			*Implementation*			
Indicator	Inclusive-ness	Equality	Resources	Account-ability	Trans-parency	Democracy	Agreement	Dispute settlement	Behavioural change	Problem solving	Durability	
An assessment of governance quality of CBFMS (from present study)												
Nepal (94/2017)	3.6	3.4	3.2	3.3	3.3	3.7	3.3	3.4	3.8	3.7	3.9	38.5
Bhutan (105/2017)	3.3	3.4	3.0	3.3	3.2	3.2	3.4	3.4	3.4	3.7	3.9	37.1
India (94/2017)	3.5	3.3	2.8	3.3	3.2	3.7	3.3	3.4	3.8	3.9	3.9	38.0
Myanmar (94/2017)	3.6	3.7	2.7	3.3	3.7	3.5	3.7	3.5	3.7	3.8	3.8	39.2
An assessment of governance quality of REDD+ (from previous studies)												
Nepal (66/2011)*	3.8	3.2	2.3	3.0	3.1	3.0	3.3	3.2	3.6	3.2	3.1	34.9
PNG (45/2015)*	3.5	2.8	2.4	2.7	2.8	3.0	2.8	2.6	3.4	3.3	3.3	32.7
Global (90/2014)**	3.4	3.0	2.2	3.2	3.0	2.8	3.0	2.8	3.1	3.1	3.2	34.9

*Cadman et al., 2016 and ** Cadman et al., 2017.

of five), as they did in India (2.5, an even lower rating). This may reflect the observation made earlier, that resources is not always about money, and includes other forms of capacity.

Application of the statistical/ANOVA test revealed that in Myanmar and Bhutan, the mean perceptions of different levels of stakeholders on most of the indicators were statistically significant at 95% confidence level ($p \leq 0.05$). In the case of Nepal and India, no such statistical significance ($p \geq 0.05$) was observed. This would appear to confirm that the perceptions of stakeholders active at particular levels may be important in these two countries if governments wish to develop or refine CF policy. This is particularly relevant to national and sub-national level stakeholders as their perceptions of the governance quality of CF were much lower than that of local level stakeholders.

3.3. Ranking/prioritisation of indicators for CBFMS in four countries on the basis of their importance at their levels

The priority that stakeholders attributed to the 11 governance indicators likewise varied, not only between the research participants in the different countries but also between the different levels of stakeholders within a country. In Nepal, compared to other countries, for instance, all indicators were seen to be relatively equally important, although at the local level, Durability was more important than other indicators, whereas at the national level, Resources was most important (Fig. 3). It should be noted that the assessment of governance quality and prioritisation of indicators are two different things. The assessment scores suggest the current governance status of the indicators and where we need to focus more to improve the quality. The prioritisation scores show the relative importance of these indicators, and therefore, suggest which of them should we consider for monitoring and reporting social and environmental safeguards.

This reflects the reality on the ground in Nepal as the newly-implemented constitution and system of federalism allow local bodies to develop their own forest laws and regulations (Government of Nepal, 2015). National level stakeholders may be worried about their own access to revenue (i.e. resources) as all royalties from the forests may now go to the local level (Government of Nepal, 2015). Due to similar concerns around resources, there is also a tension between local government bodies and community forests user groups concerning user rights and forest ownership, as currently developing provincial level laws may decide in any directions. At the local level, there is growing concern regarding the durability of the current CBFMS, which may explain why stakeholders at this level prioritised this indicator.

In Myanmar, Inclusiveness was given the highest priority ranking by local level stakeholders. This may be explained by the fact that there are about 135 ethnic groups, with 100 different languages, meaning that

Table 6
An assessment of governance quality of CBFMS, at criterion and principle level, in Nepal, Bhutan, India and Myanmar.

Criterion	Interest representation (1)	Organisational responsibility (2)	Principle Meaningful participation (1 + 2)	Decision making (3)	Implementation (4)	Principle productive deliberation (3 + 4)
Out of maximum of	15	10	25	15	15	30
Average score of Nepal	10.1	6.6	16.8	10.4	11.4	21.8
Percent of maximum possible score in Nepal	*67.3*	*66.0*	*67.2*	*69.3*	*76.0*	*72.7*
Average score of Bhutan	9.7	6.5	16.1	10.0	11.0	21
Percent of maximum possible score in Bhutan	*64.7*	*65.0*	64.4	66.7	73.3	70.0
Average score of India	9.7	6.5	16.1	10.3	11.7	22
Percent of maximum possible score in India	*64.7*	*65.0*	64.4	68.7	78.0	73.3
Average score of Myanmar	10.1	7.0	17.1	10.7	11.4	22
Percent of maximum possible score in Myanmar	*67.3*	*70.0*	68.4	71.3	76.0	73.3

Note: Some figures could vary due to rounding error.

Table 7
An assessment of governance quality of CBFMS, at three different levels, in Nepal, Bhutan, India and Myanmar.

Indicator	Inclusiveness	Equality	Resources	Accoun-tability	Transpa-rency	Demo-cracy	Agreement	Dispute settlement	Behavioural change	Problem solving	Durability	Total (out of 55)
Nepal												
Local level (33)	3.7	3.4	3.4	3.4	3.3	3.8	3.3	3.4	3.7	3.6	3.8	38.8
Sub-national level (31)	3.5	3.5	3.2	3.4	3.5	4.1	3.2	3.4	3.7	3.6	4.0	39.1
National level (30)	3.5	3.2	3.0	3.1	3.2	3.3	3.3	3.5	3.9	3.8	4.0	37.7
Significance (p-value)	0.646	0.397	0.094	0.137	0.482	0.002*	0.885	0.593	0.689	0.482	0.754	NA
Bhutan												
Local level (40)	3.6	3.8	3.1	3.8	3.7	3.3	3.7	3.8	3.7	3.9	4.0	40.2
Sub-national level (30)	3.4	3.3	3.1	3.2	3.1	3.2	3.2	3.3	3.4	3.7	3.7	36.5
National level (35)	2.9	3.1	2.9	2.8	2.8	3.2	3.4	3.1	3.2	3.4	3.9	34.7
Significance (p-value)	0.005*	0.000*	0.946*	0.000*	0.001*	0.859	0.000*	0.003*	0.253	0.579	0.053	NA
India (state of Mizoram)												
Local level (32)	3.4	3.2	2.5	3.1	3.1	3.7	3.2	3.3	3.6	3.7	4.0	36.7
Sub-national level (31)	3.5	3.3	3.0	3.5	3.3	3.6	3.3	3.5	3.9	3.9	3.7	38.4
National level (31)	3.6	3.5	3.0	3.3	3.1	3.7	3.4	3.4	4.0	4.1	4.1	39.0
Significance (p-value)	0.715	0.417	0.093	0.243	0.530	0.851	0.666	0.487	0.187	0.092	0.161	NA
Myanmar												
Local level (30)	4.0	4.5	2.8	3.7	4.3	3.7	4.7	4.4	4.0	4.4	4.7	45.3
Sub-national level (34)	3.5	3.2	2.8	3.2	3.4	3.4	3.1	3.2	3.6	3.5	3.3	36.2
National level (30)	3.4	3.3	2.6	3.1	3.4	3.4	3.2	2.9	3.6	3.5	3.5	36.0
Significance (p-value)	0.007*	0.000*	0.606	0.010*	0.000*	0.449	0.000*	0.000*	0.270	0.000*	0.000*	Na

Note: * significance at 95% confidence level.

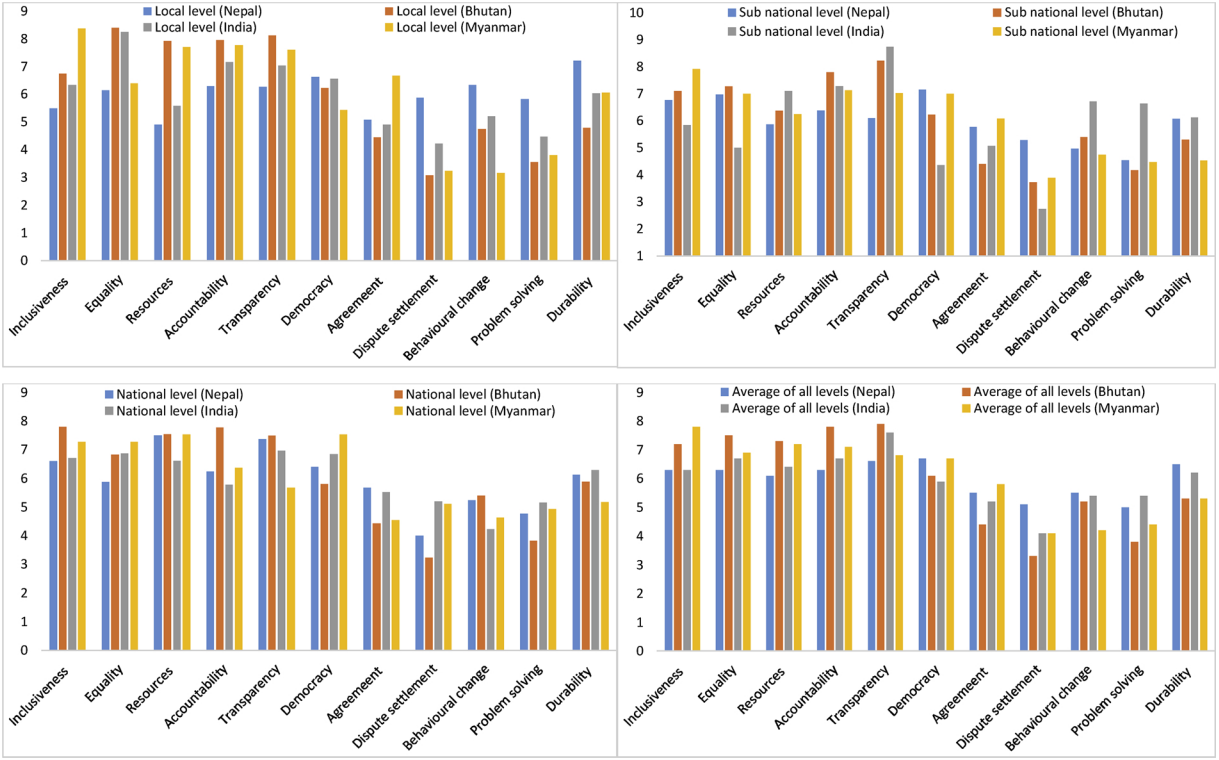

Fig. 3. Ranking/prioritisation of indicators in four countries on the basis of their importance at local level, sub-national level, national level and average of all levels.

the concerns and aspirations of all ethnic groups is understood as essential for the success of CBFMS (MONREC, 2018). National level stakeholders by way of contrast ranked Democracy and Resources as more important. This would make sense for a country only recently acquainted with democracy.

In India and Bhutan, Equality was most important at the local level, while Accountability was ranked highest in Bhutan; in the case of India it was Transparency. In the two countries these ranking would appear to demonstrate the need for more balanced power relations between the different jurisdictional levels as well as improving organisational responsibility at the national level.

When the priorities of all levels are averaged, it is possible to see that Nepalese stakeholders placed a relatively equal importance on all indicators followed by India. As discussed previously this may be the long history of CBFMS in these countries and the exposure to and understanding of a broad suite of governance values. In Myanmar and Bhutan there is a greater level of variation, perhaps on account of the more recent establishment of community forestry, and possibly reflecting a need for some targeted intervention.

These differences should be taken into account when monitoring and reporting on the governance quality of the various CBFMS in these countries, as well as REDD+, particularly regarding the social and environmental safeguards of the Cancún Agreement.

4. Conclusions and recommendations

This study assessed the governance quality for CBFMS at local, sub-national and national levels in Nepal, Bhutan, India and Myanmar, in collaboration with forest sector stakeholders, who also participated in a prioritisation exercise ranking all 11 governance indicators for each country. With total scores for all case study countries exceeding 34.5 it is fair to say that the perceptions of governance quality of CBFMS amongst respondents were positive.

There is some variation in the perception of governance quality in the case study countries. Myanmar has the highest total score followed by Nepal, India and Bhutan. However, the higher total score for Myanmar may not mean that it is better than others in terms of governance, as every country functions in different policy, legal and regulatory contexts. Myanmar has recently commenced the democratisation process and has recently deregulated its forest laws. It is also receiving international aid and development of community forestry regime and therefore there may be over-optimistic expectations for the prospects of CBFMS in the country – especially amongst local-level stakeholders.

Even within the same country, the various levels of stakeholders rated indicators differently. These differences are interesting from a policy viewpoint, as all stakeholders are dealing with the same laws and regulations and would generally share (or at least be aware of) social norms, values and cultures. Myanmar and Bhutan performed well at the local level compared to other levels. In these cases, it may be that the novelty of CBFMS is still having an impact, and the level of resources available to local forest user groups (money in the case of Myanmar and land in the case of Bhutan). In Nepal and India, there is less dynamic variation of results, possibly reflecting the more embedded nature of community/joint management systems.

Among the indicators, Resources received the lowest score in all countries, whereas Durability received the highest. Similarly, at the criterion level, Implementation received the highest score, suggesting that CBFMS has the ability to change behaviour, solve problems and ensure its sustainability/durability. Similarly, at the principal level, Productive deliberation out-performed Meaningful participation, suggesting that there is further work required to make governance structures more participatory, and actors more responsible towards one another.

Here it is worth noting that, with the exception of India, stakeholders rated the local and sub-national levels of governance higher than at the national level. It is also worth paying further attention to the relatively high scores for both Bhutan and Myanmar for local (and consequently, community) forest governance, perhaps as a consequence of the novelty and innovation factors of new management arrangements at this level. In India and Nepal, the high scores at the sub-national level may reflect the institutionally embedded nature of the 'district' model

of forest governance, where much of the administrative capacity lies. Consequently, overly devolving power away from one jurisdictional to another (for example from the sub-national to the local), may have negative consequences for governance quality, and institutional performance overall. Although these findings are interesting, such observations are speculative at this stage. However, further research would certainly be merited to determine the factors behind these jurisdictional results.

In each country, the research also demonstrated that stakeholders active at different jurisdictional levels vary in the priorities they attach to different indicators. If countries lack the capacity to institute a full suite of governance values, there may be opportunities to select those high-ranked indicators identified by stakeholders at their specific level. However, for consistency reasons at the national level, it may be more appropriate to apply the highest-ranked four or five indicators across the whole country.

In each of the case study countries, there are multiple sets of stakeholders at each jurisdictional level. Due to capacity constraints, this study was not able to reach all stakeholder sectors relevant to community based forest management. Therefore, more research across a greater number of stakeholders and larger sample sizes would be required to determine if these results are indicative of broader perceptions.

In relation to international programmes, these results suggest that initiatives such as REDD + can be integrated into national community forestry programmes. However, such endeavours ignore the different jurisdictional governance issues at their peril. Consequently, it is important that forest governance, from the national 'down' to the community level is critically interrogated, and where necessary, corrected, before full implementation. If not, efforts to reduce emissions, or solve other environmental problems, may do more harm than good.

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